Section 1. Product and Company Identification

**Product Name**
Patulin

**Product ID**
P0278

**Chemical Name**
Clavacin, clavatin, penicidin

**Supplier**
LKT Laboratories, Inc
545 Phalen Blvd.
St. Paul, MN 55130 USA
Ph: 651-644-8424 Fax: 651-644-8357
www.lktlabs.com - getinfo@lktlabs.com

**Emergency Phone #**
1-800-424-9300

Section 2. Hazards Identification

**GHS Classification**
Acute Toxicity, Oral (Category 2)
Skin Corrosion/Irritation (Category 2)

**GHS Label elements including precautionary statements**

**Pictogram**

**Signal word**
Danger

**Hazard and precautionary statements**

**Hazard statements**
H300 - Fatal if swallowed.
H315 - Causes skin irritation

**Precautionary statements**
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood. P281: Use personal protective equipment as required.
P260 - Do not breathe (dust/fume/gas/mist/vapors/spray).
P262 - Do not get in eyes, on skin, or on clothing
P264 - Wash (hands) thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear (protective gloves/protective clothing/eye protection/face protection).
P284 - Wear respiratory protection.
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302 + P330 - IF ON SKIN: Gently wash with plenty of soap and water.
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310 - Immediately call a POISON CENTER or doctor/physician.
P330 - Rinse mouth.
P361 - Remove/Take off immediately all contaminated clothing.
P363 - Wash contaminated clothing before reuse.
P402 - P233 - Store in a well-ventilated place. Keep container tightly closed.
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/ container to an approved waste disposal plant.

**HMIS Classification**
Health Hazard: 3
Chronic Health Hazard: *
Flammability: 0
Physical Hazards: 0

**NFPA Rating**
Health Hazard: 4
Fire Hazard: 0
Reactivity Hazard: 0

**Potential Health Effects**
Inhalation - May be harmful if inhaled. May cause respiratory tract irritation.
Skin - May be harmful if absorbed through skin. Causes skin irritation.
Eyes - May cause eye irritation.
Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Substance</th>
<th>Ingredient: Title Compound</th>
<th>Percent:</th>
<th>Formula Wt.</th>
<th>EC No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>formula</td>
<td>C7H6O4</td>
<td></td>
<td>154.12</td>
<td></td>
</tr>
<tr>
<td>CAS No.</td>
<td>149-29-1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Eye Contact
Flush eyes with water as a precaution.

Skin Contact
Wash off with soap and plenty of water.

Inhalation
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5. Firefighting Measures

Flash Point
Not available.

Extinguishing Media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Firefighting Procedures
Wear self-contained breathing apparatus for fire fighting if necessary.

Unusual Fire Hazards
Carbon oxides, nitrogen oxides (NOx).

Section 6. Accidental Release Measures

Personal Precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental Precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleanup
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7. Handling and Storage

Handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Storage Conditions
Keep container tightly closed in a dry and well-ventilated place.
Recommended storage temperature: +4°C

Hazardous Decomposition Products
Not available.

Other Remarks
Section 8. Exposure Controls/Personal Protection

**Personal protective equipment**

**EXPOSURE CONTROLS**
Contains no substances with occupational exposure limit values.
General industrial hygiene practice.

**PERSONAL PROTECTION**

- **Eye/face protection:** Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).
- **Skin protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
- **Body protection:** Choose body protection in relation to its type, to the concentration and amount of dangerous substances and to the specific workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
- **Respiratory protection:** For nuisance exposures, use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection, use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 1243) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Color</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>Volatility</td>
<td>Not available.</td>
</tr>
<tr>
<td>109-111°C</td>
<td>Density</td>
<td>Not available.</td>
</tr>
<tr>
<td>acetonitrile, ethanol, acetone, ethyl acetate, also soluble in water</td>
<td>pH</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Ignition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>Autoignition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>Vapor pressure</td>
<td>Not available.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Odor</td>
<td>Not available.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Odor Threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>log Pow: ca.6.8</td>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Section 10. Stability and Reactivity

**Stability**
Stable under recommended storage conditions.

**Materials To Avoid**
Strong oxidizing agents.

**Hazardous Decomposition Products**
Not available.
### Section 11. Toxicological Information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>Rat - 27790 ug/kg, mouse - 17 mg/kg</td>
</tr>
<tr>
<td>Skin   corrosion/irritation</td>
<td>Not available.</td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>Not available.</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not available.</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>Not available.</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>Not available.</td>
</tr>
<tr>
<td>Other information on acute toxicity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Aspiration Hazard</td>
<td>Not available.</td>
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<tr>
<td>Specific organ toxicity single exposure (GHS)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Synergistic effects</td>
<td>Not available.</td>
</tr>
<tr>
<td>Specific organ toxicity repeated exposure (GHS)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Additional Information</td>
<td>RTECS: LV2625000</td>
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<tr>
<td>Teratogenicity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Signs and symptoms of exposure</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

**Potential Health Effects**
- **Inhalation**: May be harmful if inhaled. May cause respiratory tract irritation.
- **Skin**: May be harmful if absorbed through skin. Causes skin irritation.
- **Eyes**: May cause eye irritation.
- **Ingestion**: Fatal if swallowed.

**Carcinogenicity**
- **IARC**: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.
- **ACGIH**: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- **NTP**: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- **OSHA**: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### Section 12. Ecological Information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Mobility in soil</td>
<td>Not available.</td>
</tr>
<tr>
<td>PBT and vPvB</td>
<td>PBT/vPvB assessment not available as chemical safety assessment not required/not available.</td>
</tr>
</tbody>
</table>
Section 13. Disposal Considerations

Waste Disposal
Dispose of material according to all federal, state and local regulations. Offer material to a licensed, professional waste disposal company to dispose of as unused product.

Section 14. Transport Information

DOT (US)
UN number: 3462 Class: 6.1 Packing Group: II
Proper shipping name: Toxins, extracted from living sources, solid, n.o.s. (Patulin)

IATA
UN number: 3462 Class: 6.1 Packing Group: II
Proper shipping name: Toxins, extracted from living sources, solid, n.o.s. (Patulin)

IMDG
UN number: 3462 Class: 6.1 Packing Group: II EMS-No: F-A, S-A
Proper shipping name: TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S. (Patulin)
Marine pollutant: No

Further Information

Section 15. Regulatory Information

Reach No.

SARA 302 Components SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Components No SARA hazards.

Massachusetts Right To Know Components No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components Patulin CAS: 149-29-1

New Jersey Right To Know Components Patulin CAS: 149-29-1

California Prop 65 Components This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.

Section 16. Other Information

Other information The information in this document is believed to be correct but is not necessarily complete. LKT does not guarantee the accuracy of the information. The burden of verifying the information in this document rests solely upon the user.